

CalNex Forecast Notes - Sunday, June 27, 2010

Anticipated Flights

NOAA Twin Otter

Sun: two flights
Mon: potentially one flight?
Tue: transit to LA
Wed: Mexico flight

CARES DOE G-1 and NASA B200

Sun: AM/PM flights likely
Mon: AM/PM flights likely
Tues: MISSION ACCOMPLISHED

Local Features

Sunday - synoptic flow weakens significantly, terrain driven flow with light W delta inflow coupled with upslope flow; pollutant concentrations build (Unhealthy for Sensitive Groups forecast); CANSAC appears better solution than COAMPS today; weak flow to east in Sac (downtown to T0 flow doubtful; urban flow toward T1 with long transport time) but bulk of urban flow south of T1; winds <5 kts.

Monday - high pressure ridge lingering - primarily terrain driven flow; light NW to W wind coupled with upslope flow in foothills; no or limited Delta inflow; with light winds, Sac air flows south of T1; USG air quality likely.

Tuesday - smoke possible from prescribed burns in Yosemite and Sequoia National Parks.

Synoptic Overview for California -

**NOTE: FORECAST NOT UPDATED FROM SATURDAY'S CALL
(only change is that ridge slower to break down and Monday will be
similar to Sunday)**

Sunday June 27

- High Pressure peaks
- Light and variable flow
- Onshore gradient weakens

Monday June 28

- High Pressure breaks down as Trof approaches
- Transport flow SW north, Southerly south
- Marine layer deepens in the north
- Light and variable flow S.CA

Tue – Thurs

- Tue: Deep Trof approaches, SW flow throughout
- Wed: Trof axis over N.CA late aftn-eve, SW flow, deeper marine layer
- Thurs: Trof axis over Ca, W-NW flow in N.CA, W-SW in S.CA

Large Scale Transport Notes - Leon Dolislager (ldolisl@arb.ca.gov)**focus on Sacramento area****500m RDF FX 00Z 06/27 (Sun Afternoon)**

Clean air wrt transport over area (low levels of BC_OC, SO₄, PM_{2.5}, CO and O₃). Moderate (5-10ppbv/day) background O₃ P-L. Minimal vertical displacement of air (descent near coast).

500m RDF FX 00Z 06/28 (Mon Afternoon)

Clean air wrt transport over area (clean to low levels of BC_OC, SO₄, PM_{2.5}, CO and O₃). Low (0-5ppbv/day) background O₃ P-L. Strong descent of air.

focus on San Joaquin Valley**500m RDF FX 00Z 06/29 (Tue Afternoon)**

Generally clean air wrt transport over area (clean to low levels of BC_OC, SO₄, PM_{2.5}, CO); O₃, BC_OC, and SO₄ slightly higher in Kern County). Low (0-5ppbv/day) background O₃ P-L. Moderate descent of air; more descent in southern portion of valley.

focus on Mexico

500m RDF FX 00Z 06/30 (Wed Afternoon)

Generally clean air wrt transport over area (clean to low levels of BC_OC, SO₄, PM_{2.5}, CO); Note: SO₄ very high to SW and E of northern Mexico; moderate O₃ levels. Low (0-5ppbv/day) background O₃ P-L. Minimal vertical displacement of air.

RAQMS Reverse Domain Filling forecasts will continue to be posted by 6:40am (Pacific) @ http://raqms-ops.ssec.wisc.edu/RDF_products/CalNex/RDF/ Go to YYYYMM

Area Forecast Details

Sacramento Valley - forecast from Saturday's call

Sunday

- AM: Weak onshore flow continues to die down, generally S and below 4kt in Sac Cnty in early AM; onshore flow nonexistent; stagnation in mid morning and Sac Cnty becomes SSW2kt in late morning
- Early PM: Onshore flow starts to resume W10kt in the Bay; greater upslope flow in the valley - Sac Cnty at W4kt; wind shift between late morning and early afternoon provides opportunity for Downtown plume to move to T0 and T1, may miss T1 because southerly wind not strong enough
- Late Aftn: Onshore flow makes it way into lower Sac Cnty; upper Sac Cnty and Cool still under thermal upslope effect
- Evening: Onshore flow reaches the foothills, but not strong enough to go upslope to Cool
- PBL 500 to 1000ft in AM; PM PBL 5,000ft (S.SV)
- MBL below 500ft;
- Max aftn temp: 38C/100F; USG air quality

Monday

- AM: Weak onshore flow, almost nonexistent; stagnation (SSW2kt) in Sac Cnty until thermally driven upslope flow draws W flow in late morning; W3kt flow to Cool, Sac Cnty at W2kt in late AM;
- Early PM: Sign of onshore flow starting up, upslope flow stronger from the W; Downtown plume brush by just south of T0 and misses T1
- Late Aftn: Onshore flow reaches the delta; Downtown plume gets close to T0 (under a bit of delta wind influence) but still misses T1; T1 still experiences upslope flow from the W
- CANSAC transport wind shows plume will stay in Sac foothills, more northern than GFS tranjectories

- AM PBL 500ft; PM PBL 5,000ft
- MBL below 500ft;
- Max aftn temp: 35C/95F; USG air quality

Sacramento Trajectory (Sun) - sac plume toward ESE
 Sacramento Trajectory (Mon) - sac plume toward ESE

San Joaquin Valley - Shawn Ferreria (Shawn.Ferreria@valleyair.org)

Sunday June 27

Surface Winds: The surface observations this morning show thermally driven wind flow across the SJV. The Chowchilla and Visalia wind profilers indicate light and variable wind flow throughout the atmospheric profile. 0Z CANSAC shows weak onshore flow, with afternoon thermally driven northwesterly winds across the entire District this afternoon. Winds will become light and variable this evening. Onshore flow will weaken overnight.

Boundary Layer Mixing: 0Z CANSAC indicates maximum mixing depths will be between 2,000 and 3,000 feet this afternoon.

Air Quality: Moderate air quality will dominate from Madera county northward. USG air quality will prevail for Fresno, Kings, Tulare, and Kern Counties.

Monday June 28

Surface Winds: Thermally driven wind flow will continue tomorrow. Northwesterly winds will be stronger tomorrow as compared to Sunday.

Boundary Layer Mixing: Slightly deeper mixing depths will occur tomorrow under a little more afternoon heating.

Air Quality: Moderate air quality will dominate from Madera county northward. USG air quality will prevail for Fresno, Kings, Tulare, and Kern Counties.

Note: RX Burn Scheduled on Tuesday in Sequoia Kings Canyon National Park (Bobcat)

Central Coast -

(NO FORECAST TODAY until SoCal operations)

SoCal Coastal Waters -

(NO FORECAST TODAY until SoCal operations)

South Coast Basin -

(NO FORECAST until SoCal operations)